Solve Inequalities by Multiplication or Division

TOPIC 4 / MATHEMATICS

Write. Represent. Explain.

45-minute lesson • Original classroom examples

What will we learn today?

- Solve positive-coefficient inequalities and interpret solutions.
- Use an equation, inequality, table, or diagram to justify your reasoning.
- Explain your answer using mathematical vocabulary and units.

5-minute warm-up

Discuss with a partner: What previous algebra or number skill will help with today’s lesson?

Show one calculation or example in your notebook.

Why this lesson matters

Four equal boxes contain at least 36 kilograms.

What is known? What is unknown? Which quantities are related?

Represent the relationship

Four equal boxes contain at least 36 kilograms.

$$4m \geq 36$$

Explain the meaning of the variable, numbers, and operations.

Worked example

Solve $4m \geq 36$ using division by four.

$$m \geq 9$$

Check: Does the result match the original relationship?

Independent practice

1. Solve $x \div 5 < 7$.

2. Solve $2.5q \leq 20$.

Check your reasoning

Question 1

$$x < 35$$

Question 2

$$q \leq 8$$

Group challenge

Explain why dividing by positive 3 keeps the inequality direction.

Each group member must explain one step or defend one claim.

Group challenge • solution

$$3x > 12 \Rightarrow x > 4$$

Compare methods. Does the answer make sense in context?

Additional Practice — If Time Allows

Explain $4m \geq 36$ using division by four.

Extension: Create a similar problem with different numbers.

2-minute exit ticket

Solve $6n \geq 42$.

Work independently. Show enough steps to explain your thinking.

Exit ticket • answer

$$n \geq 7$$

Reflect: What would you check before moving to the next lesson?